

# Project Information



## High Definition Videoconferencing over IP Environment



The mission of HDVIPER is to open up the traditional videoconferencing market and promote Europe's role as a leading technological partner in videoconferencing. The HDVIPER consortium will design and develop an open and scalable High Definition (HD) videoconferencing platform based on a new application called Snake. The final delivery of the project is to integrate the Snake application with standard products and perform interactive demonstrations.

### Main focus

Nowadays videoconferencing services are becoming more and more popular thanks to the improvement of IP networks and Internet. New access technologies that will be available in the coming years to the users of the global IP networks will provide the best infrastructure for HD videoconferencing services. The HD videoconference requires high bandwidth, but the "best effort" Internet (currently used for most SD videoconferences) is not good enough to assure sufficient Quality of Ser-

vice (QoS) for a HD system. Therefore one of the main issues for the HDVIPER project is to create those services needed to provide the superior HD videoconferencing system, attractive for both end users and operators.

The HD videoconferencing platform will be built using the Service Oriented Architecture (SOA) paradigm. The session control mechanism for establishing videoconferences will be based on the Session Initiation Protocol (SIP) protocol. The Snake application's SOA services will allow the allocation of the requested resources in the network to provide the desired QoS and the negotiation of the most suitable media parameters to be used in the session.

### Approach

The first phase of the HDVIPER project is to gather requirements from the potential end users. End users have been classified into four different groups. For each group, separate usage scenarios will be analyzed



## HDVIPER

Project ID: CP4-012

Start Date: 1 September 2007

Closure date: 31 August 2009

### Partners:

Alcatel-Lucent España, Spain

Androme Ibérica, Spain

Alkit Communications, Sweden

Borderlight, Sweden

Fundació i2CAT, Spain

Karolinska Institutet, Sweden

Poznan Supercomputing and Networking Center - Institute of Bioorganic Chemistry, Polish Academy of Sciences, Poland

Royal Institute of Technology (KTH), Sweden

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[www.celtic-initiative.org/projects/hdviper](http://www.celtic-initiative.org/projects/hdviper)

and evaluated. The information gathered from the home, office, healthcare and school scenarios will be used during the requirements elicitation process. The first phase will deliver a specification of requirements that will be the input for phase two, the designing and developing of the Snake application and implementation of the media, control and network services for the HD videoconference platform. During the design and development of the media services different video resolutions, codecs and formats will be considered. The control services will provide tools that will be responsible for management of the conference in a secure and flexible way. Security features include user authentication, key exchange, and protection against threats. The network services will facilitate the transmission of the media content providing the desired Quality of Service. The third phase of the HDVIPER project will consist of demonstration activities using the developed platform in the targeted home, office, healthcare and school scenarios.

One critical activity to be carried out during the project is the matching of the requirements specification against the abilities of standard products in the market. Providing HD videoconferencing services will demand close cooperation with manufacturers to make sure that they will fulfill the new requirements.

Throughout the project duration, dissemination activities and contri-

bution to standards will be performed.

## Main results

The HDVIPER project will achieve four goals. The first goal is to develop a HD videoconferencing platform accessed via the Snake application. The videoconferencing platform will deal with the media, control and network services. The second goal is to build local test-beds and perform demonstrations according to the analyzed scenarios – home, office, school and healthcare. The third goal is to integrate the Snake application with standard products in the market. The fourth and last goal is to disseminate the project outcome and to contribute to the main standardization bodies.

The HDVIPER project will introduce innovations in Web Services and SIP services. Currently, there are no open solutions fulfilling the SOA paradigm that can handle both middleware and network layers. Specifically, there aren't any that provide the needed non-real-time services, like directory and accounting services or assure the required network parameters (QoS). There is neither no open solution using the Session Initiation Protocol for allowing to set up, maintain and release sessions of any video quality, from traditional H.263 at 200 Kbps up to the maximum quality that can be currently transmitted using SMPTE standards, that is HD-SDI at 1.485 Gbps.

## Impact

The software and hardware prototype delivered at the project closure will act as a starting-point for launching commercial services. This will enable new companies and organizations to enter the videoconferencing market, which today is monopolized by a few manufacturers. The HDVIPER platform will give network operators the possibility of offering HD videoconferencing services in an easy way. More actors in the market will lower the cost, improve the services and increase the flexibility for the end users.

Providing the requirements specification of the HD videoconferencing platform will lead to more manufacturers producing conformant hardware.

Together with the expansion and improvement of high capacity networks, the HD videoconferencing platform gives tangible benefits and improved efficiency not only to big organizations. Possible advantages are, for example, travel cost savings, shorter decision time in the development value chain, shorter lead time for development of services and products, improved medical security and decision making, shorter time lap between diagnostic, decision and treatment, improved e-learning and distant education

## About Celtic

Celtic is a European research and development programme, designed to strengthen Europe's competitiveness in telecommunications through short and medium term collaborative R&D projects. Celtic is currently the only European R&D programme fully dedicated to end-to-end telecommunication solutions.

**Timeframe:** 8 years, from 2004 to 2011

**Clusterbudget:** in the range of 1 billion euro, shared between governments and private participants

**Participants:** small, medium and large companies from telecommunications industry, universities, research institutes, and local authorities from all 35 Eureka countries.

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